

REMARKS

In the Office Action, the Examiner indicated that claims 4-11 and 50-53 are allowed and that claims 2, 3, and 15-17 would be allowed if rewritten in independent form. Applicants wish to thank the Examiner for the early indication of allowable subject matter. The Examiner, however, rejected claims 1 and 12-14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,525,901 issued to Clymer et al.

Also in the Office Action, the Examiner set forth a restriction requirement resulting in the withdrawal of claims 18-49 and 54-106 from further consideration. Applicants have canceled these claims without prejudice and reserve the right to pursue these claims in a divisional application.

Applicants respectfully traverse the rejection of claims 1 and 12-14 as being anticipated by Clymer et al. Independent claim 1 is directed to an electronic compass system for a vehicle comprising at least a magnetic sensor circuit for sensing three components of the Earth's magnetic field vector; a pitch and roll sensing circuit for measuring the pitch and roll of the magnetic sensor circuit; and a processing circuit coupled to the magnetic sensing circuit and the pitch and roll sensing circuit for receiving the output signals from the magnetic sensor circuit, compensating the sensed components for the measured pitch and roll, computing a heading of the vehicle as a function of at least two of the compensated sensed components, and generating a heading signal representing the computed heading.

The Clymer et al. patent discloses that the magnetic sensing circuit, *i.e.* the magnetic sensors, may be used to detect pitch and roll without utilizing separate pitch and roll sensors. However, Clymer et al. does not disclose utilizing a pitch and roll sensing circuit that is separate from the magnetic sensor circuit such that a processing circuit may then compensate the values sensed by the magnetic sensor circuit based upon the measured pitch and roll as measured by the pitch and roll sensing circuit. Clearly, because Clymer et al. utilizes the magnetic sensor circuit for sensing pitch and roll itself, it cannot then compensate the values sensed by the magnetic sensor circuits based upon the pitch and roll that has been sensed. For

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these reasons, Applicants respectfully submit that Clymer et al. does not anticipate independent claim 1.

Independent claim 12 recites an electronic compass assembly for a vehicle comprising a circuit board defining a plane corresponding to a mounting surface thereof; a magnetic sensor circuit mounted on the circuit board for sensing at least two components of the Earth's magnetic field vector..., wherein said magnetic sensor circuit includes at least two magnetic field sensing elements each having an axis of sensitivity wherein at least one of the magnetic field sensing elements is positioned such that its axis of sensitivity is oriented in one of the following two orientations; (a) non-perpendicular and non-parallel to the plane of the circuit board, and (b) non-perpendicular to the axis of sensitivity of another one of said at least two magnetic field sensing elements; and a processing circuit.

In rejecting claim 12, the Examiner contends that the magnetic sensing elements are positioned in non-perpendicular orientation. The Examiner then refers to two portions of the Clymer et al. reference in support of this assertion. Applicants have reviewed these portions, however, it is clear that Clymer et al. does not disclose that the sensors are non-perpendicular. Instead, in the first portion referenced by the Examiner, the Clymer et al. references actually teaches that the two sensors are deployed orthogonally or perpendicular to one another in the same plane. Thus, the Clymer et al. patent teaches the opposite of what claim 12 recites. Accordingly, Applicants respectfully submit that independent claim 12, as well as claims 13 and 14 which depend from claim 12, are allowable over the teachings of Clymer et al.

In view of the foregoing remarks, Applicants respectfully submit that the present invention as defined by the pending claims, is allowable over the prior art of record. The Examiner's reconsideration and timely allowance of the claims is requested. A Notice of Allowance is therefore respectfully solicited.

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Respectfully submitted,

PRICE, HENEVELD, COOPER,
DEWITT & LITTON, LLP

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Date

/Terry S. Callaghan/
Terry S. Callaghan
Registration No. 34,559
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

TSC/amm